ORCHELIMUM FEEDING NOTES.

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A meadow grasshopper, female *Orchelimum* sp. (det. Dr. H. K. Towns), collected in an alfalfa field at Logan on July 20, 1942, was placed in a glass tube cage 1 inch in diameter by 3 inches high, containing a small sprig of alfalfa and 5 pea aphids, *Macrosiphum pisi* (Kalt.). With but 30 aphids supplied the first three days this grasshopper ate the aphids, then fed to a limited extent on the alfalfa. On July 23, 150 third and fourth instar and adult pea aphids were placed in the cage within an hour; the first 50 placed in the cage were eaten within 10 minutes, and a total of 90 were consumed within 30 minutes; at the end of 24 hours, 146 of the 150 aphids had been eaten; at this time the abdomen of the grasshopper was much distended from which condition it did not fully return to its former size. In feeding the grasshopper usually would grasp an aphid with its pro-thoracic tarsi and bring it to its mouth, readily eating the aphid regardless of the position the predator was in when the prey was captured. This *Orchelimum* was observed to feed while standing normally, resting on its head, lying on its back and while on its side. By July 27, the grasshopper was very tame, readily grasping the aphids from the forceps when they were introduced in this manner. On the eighth day, the grasshopper began chewing on the cork which comprised the bottom of the cage, through which the living sprig of alfalfa passed; such chewing occurred thereafter almost every day; also some slight nibbling on the alfalfa, but this occurred only on two occasions after the third day. On August 9, this grasshopper seemed at first to prefer chewing cork to eating aphids. Of 1000 third and fourth instar and adult pea aphids introduced into the cage from July 20 to August 12, only 10 of these were not eaten. This was an average pea aphid consumption of approximately 43.5 per day for the 23 days during which observations were made. Doubtless many more aphids would have been eaten had larger numbers been supplied regularly.

Seventy-five pea aphids, two *Lygus elisus* Van D., two small and one larger alfalfa caterpillar were caged with this predator on July 30. By next day all of these except five of the aphids had been captured and eaten.

Eight adult *Lygus elisus* and *L. hesperus* Knt. adults and three nymphs, besides one adult *Nabis alternatus* Parsh. and one winged pea aphid were introduced into the cage on August 13. Next day

four adult and two nymphal *Lygus,* the *N. alternatus* and the winged pea aphid had been eaten. The following day, one more adult and the nymphal *Lygus* were eaten, the remaining three insects being consumed by the following day. At this time the grasshopper abdomen again had become conspicuously large, giving a typical "well-fed" appearance. By this time the meadow grasshopper had lost four of its tarsi, and had chewed away the distal three-fifths of its ovipositor.

This grasshopper apparently has not been abundant in Utah pea aphid infested fields; its benefit as a predator evidently is rather limited.

Stingless Bees Nesting in Association with Ants (Hymenoptera).—In July, 1936, at Muzo, Dept. Boyacá, Colombia, I observed a voluminous nest placed in a bush some five feet above the ground. It was closely woven of a fibrous material apparently taken from some plant, not of silk secreted by larvae. When found, it harbored a thriving colony of the aggressive ant, *Dolichoderus* (*Monacis*) *trispinosus* (Olivier). The late Prof. W. M. Wheeler, who named it, informed me, however, that this *Dolichoderus* is not known to weave a nest of its own, but instead usurps existing nests, particularly of termites and sometimes of other ants. He suggested that the nest found at Muzo may have been built by an *Azteca,* which was later driven from it by the *Dolichoderus.* At the time of observation part of the nest was also occupied by a colony of a small stingless bee, *Trigona* (*Paratrigona*) *opaca* Cockerell, seemingly on friendly terms with the *Dolichoderus.* Mr. Herbert F. Schwarz, who kindly named the bee, called my attention to published accounts of similar associations, which he intends to discuss in his forthcoming Monograph of *Trigona.* Two myrmecophilous beetles were bred from the *Dolichoderus* colony: one a paussid, *Homopterus steinbachi* Kolbe; the other a cremastochilid of the genus *Genuchinus* (according to Prof. A. Reichensperger).—J. Bequaert, Museum of Comparative Zoology, Cambridge, Mass.

Lofty Mantis Egg-case.—Near Seaford, L. I., the egg-mass of a praying mantis, *Tenodera sinensis,* was observed attached to the branch of a slender birch tree. The egg-case was found to be more than fifteen feet from the ground.—Edwin Way Teale, Baldwin, L. I., N. Y.